

Innovative Dengue and Climate Change Game

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Dengue should be a priority for policy makers at Durban because of the magnitude of its public health burden, its shifting transmission patterns with climate change, and the ability to intervene with low cost and low technology solutions (e.g. cleaning breeding grounds).

This game was developed by a team of graduate students at Yale University and Parsons Institute of Design for the Red Cross Red Crescent to use in the field to educate children about dengue risk factors and climate change. This game showcases innovative teaching tools in the field. Playing the game will allow children and policy makers alike to understand and engage on an emotional level with complex and abstract concepts of climate change and dengue transmission.

Background:

Worldwide, over 2.5 billion people are at risk of dengue. It is estimated that between 50 to 100 million cases of dengue fever and 250,000 to 500,000 cases of dengue hemorrhagic fever occur each year. Dengue is found in tropical and subtropical climates, in urban and semi-urban areas. It is found in over 100 countries. It is a virus spread by infected female mosquitoes (*Aedes aegypti*). There are four different viruses that cause dengue. After an infection, a person will develop lifelong immunity to that specific virus and transient immunity to the other three viruses.

There is no vaccine, cure, or specific treatment for dengue fever. However, prevention remains the only effective strategy to combat dengue. Dengue can be prevented through the control of the mosquito population with biological, chemical, and environmental methods. The Red Cross Red Crescent emphasizes dengue interventions should focus on the importance of cleaning breeding grounds more than using insecticides. Our game highlights the importance of prevention especially clearing breeding grounds.

Climate change will influence the transmission of dengue. Climate change fluctuations such as rain, warmer weather, and water shortages will all increase the prevalence of this disease. The Red Cross Red Crescent is one of the humanitarian agencies that are actively responding to the health care impacts of climate change by organizing education and cleaning campaigns to reduce the spread of dengue in countries such as Peru, Bolivia, and Paraguay. Climate change will place a greater burden on humanitarian agencies responding to dengue epidemics and they will require increased support to reach the most vulnerable populations worldwide.

Game Scope: Vector-borne diseases and climate change.

Game Focus: Education of dengue risk factors, especially those related to climate change, and the consequences of human behaviors that impact its spread.

Game Target audience: Primary audience school aged children between the ages of 8-12. Secondary audience is UN Convention on Climate Change (UNFCCC) participants, Red Cross/Red Crescent workers, parents and educators (teachers, nurses, and physicians).

Number of players: minimum 6 players.

Time required to play game: 15 - 30 minutes.

Game Designers:

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